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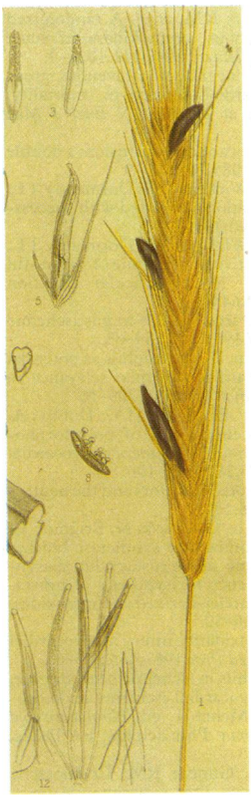
PLANTS IN CARDIOLOGY



Claviceps purpurea Tul. Bentley R, Trimen H. *Medicinal plants.* vol 4. London: Churchill, 1880: 303. The black bodies are the sclerotia.

Ergometrine (ergonovine)

The fungus *Claviceps purpurea* (Clavicipitaceae) is a parasite that infects the flowers of cereals, notably rye, replacing them with a curved hard mass or sclerotium of mycelia which is called ergot (from Old French argot, a cock's spur). In the Middle Ages rye bread infected with ergot caused large epidemics of gangrene of the hands and feet and mental symptoms. Ergotism was often fatal. The blackened extremities looked as if they had been burnt in a fire, and the malady was called St Anthony's Fire because the patients were treated at the saint's monastery in Padua.

Since 300 BC ergot has been recognised as causing abortion. Thus its vasoconstrictor, oxytocic, and cerebral effects were known long before the responsible alkaloids were isolated. Ergotoxine and ergotamine were the first to be found and their effect on human uterine contraction was studied in 1932 by Chassar Moir. He then tested the traditional liquid extract of ergot which was thought by some scientists, though not by clinicians, to be ineffective and he showed its action to be much larger than the two alkaloids. This led to the isolation of a new alkaloid, ergometrine (ergonovine). Its vasoconstrictor action was first used in the investigation of coronary artery spasm in 1976 by T O Cheng at the suggestion of E Shirey and W Sheldon.

Ergot has been called "a veritable treasure house of pharmacological constituents." Ergot derivatives include the hallucinogen, lysergic acid diethylamide (LSD), bromocriptine (used to treat pituitary tumours and parkinsonism), and the serotonin antagonist, methysergide, which is an effective prophylactic in migraine. Methysergide can cause fibrosis of the mitral and aortic valves.

There are over 200 000 species of fungi. They are of great importance in medicine, producing antibiotics and also cyclosporin. The fungi are by tradition classified as plants but because they differ from them and from animals in several ways there is a proposal to create a separate fungal kingdom.

A HOLLMAN